Corbett maths

Estimated Mean

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Examples

Workout

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Question 1: Work out an estimate of the mean for each of these frequency tables.

(a)

Length	Frequency	Midpoint	
0 < L ≤ 10	6		
10 < L ≤ 20	7		
20 < L ≤ 30	5		
30 < L ≤ 40	1		
40 < L ≤ 50	1		

(b)

Cost	Frequency	Midpoint	
0 < c ≤ 4	2		
4 < c ≤ 8	3		
8 < c ≤ 12	5		
12 < c ≤ 16	12		
16 < c ≤ 20	3		

(c)

Length	Frequency	Midpoint	
0 < t ≤ 5	11		
5 < t ≤ 10	37		
10 < t ≤ 15	43		
15 < t ≤ 20	9		

(d)

Mass	Frequency	Midpoint	
50 < m ≤ 55	3		
55 < m ≤ 60	5		
60 < m ≤ 65	10		
65 < m ≤ 70	12		
70 < m ≤ 75	10		

Question 2: Work out an estimate of the mean for each of these frequency tables.

(a)

Duration (years)	Frequency
0 ≤ d < 10	9
10 ≤ d < 20	13
20 ≤ d < 30	16
30 ≤ d < 40	2

(b)

Length (cm)	Frequency
0 ≤ L < 30	8
30 ≤ L < 60	43
60 ≤ L < 90	25
90 ≤ L < 120	4

(c)

Mass	Frequency
20 < m ≤ 25	12
25 < m ≤ 30	24
30 < m ≤ 35	17
35 < m ≤ 40	15
40 < m ≤ 45	4

(d)

Height	Frequency
120 < h ≤ 130	51
130 < h ≤ 140	120
140 < h ≤ 150	66
150 < h ≤ 160	59
160 < h ≤ 170	4

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Question 1: Sally is raising money for charity for a fun run.
The table below has been given to her from the website.

Sally says the average donation is £10.
By calculating the estimated mean, decide if you agree with Sally.

Donation	Frequency
$0 < d \leq 5$	44
$5 < d \leq 10$	35
$10 < d \leq 20$	16
$20 < d \leq 50$	3
$50 < d \leq 100$	2

Question 2: Nathan delivers pizzas.
The table below shows information about his delivery times.
The pizza company has a promotion that if the delivery time is over 30 minutes, the customer gets their meal for free

(a) Calculate an estimate for the mean delivery time

(b) What percentage of deliveries took over 30 minutes?

Delivery Time	Frequency
$0 < t \leq 10$	3
$10 < t \leq 20$	10
$20 < t \leq 30$	14
$30 < t \leq 40$	19
$40 < t \leq 50$	4

Nathan's manager thinks that the promotion should be changed to 40 minutes

(c) Do you agree? Explain your answer.

Question 3: The manager of a small company is calculating the mean salary for his workers.
He has calculated this to be £568,500 per year.
Can you spot any mistakes?

Salary	Frequency	Midpoint	fx
$0 < s \leq 15000$	2	7500	15000
$15000 < s \leq 30000$	15	22500	337500
$30000 < s \leq 45000$	6	37500	2250000
$45000 < s \leq 60000$	2	52500	105000
$60000 < s \leq 100000$	2	67500	135000
			2842500

Mean salary = 2842500 ÷ 5 = £568500

Answers

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